2019 Periodic Review Report

Reporting Period: August 9, 2018 – January 14, 2019

Former C & F Plating Site

NYSDEC Site No: 401507

406 North Pearl Street, Albany, New York

NYSDEC Standby Contract D007625-45

September 10, 2019

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation, Bureau E
625 Broadway, 12th Floor
Albany, NY 12233-7017

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

ACM	Asbestos Containing Material
ASP	Analytical Services Protocol
Bgs	below ground surface
COCs	Contaminants of Concern
ECL	Environmental Conservation Law
ECs	Engineering Controls
FER	Final Engineering Report
GWQS	Groundwater Quality Standard
HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C.
ICs	Institutional Controls
MACTEC	MACTEC Engineering and Consulting, P.C.
MCL	Maximum Contamination Level
MDLs	Minimum Detection Limits
ng/L	Nanograms per liter
NYCRR	New York Code of Rules and Regulations
NYSDOH	New York State Department of Health
NYSDWC	New York State Drinking Water Quality Council
PCBs	Polychlorinated biphenyls
PES	Precision Environmental Services, Inc.
PFCs	Perfluorinated Compounds
PFOA	Perfluorooctanoic acid
PFOS	Perfuorooctanesulfonic acid
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SCGs	Standards, Criteria, and Guidance
SCOs	Soil Cleanup Objectives
SMP	Site Management Plan
TA	Test America Laboratories
TOGS	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
µg/L	micrograms per liter

1.0 EXECUTIVE SUMMARY

The C & F Plating inactive hazardous waste site in Albany, New York is currently listed on the New York State Department of Environmental Conservation (NYSDEC) Environmental Site Remediation Database as a Class 2 (NYSDEC Site No. 401057). This designation is for sites where the disposal of hazardous waste has been confirmed and the presence of such hazardous waste or its components or breakdown products represents a significant threat to public health or the environment.

As a result of historical chrome plating and improper hazardous materials storage operations from the 1920s to 1985, metals migrated from the former facility to underlying subsurface soils and groundwater. In accordance with the NYSDEC 2014 Record of Decision (ROD), remedial activities including building demolition, creek bank stabilization, soil excavation, and in-situ contaminant treatment took place from June 2014 to November 2015. Currently, the site is vacant and utilized as a parking lot for the current owner, Danz Holdings, LLC (Family Danz).

Engineering controls (ECs), which are protective of public health and the environment, were in-place during this reporting period and have largely remained unchanged since the NYSDEC completed the above referenced remedial activities, and as further reported in the NYSDEC 2016 Final Engineering Report (FER). Subsequent to this reporting period an issue with the older original section of the retaining wall was discovered when a small area behind the wall washed out. Corrective Measures are underway to repair/replace the older wall section.

During this reporting period, groundwater sampling activities were performed by Precision Environmental Services of Ballston Spa, New York (PES), on behalf of the NYSDEC, on August 9, 2018 and January 10, 2019, and are further discussed in Section 4.3.1. Site inspection activities were performed by Henningson, Durham and Richardson Architecture and Engineering, P.C. (HDR) under Standby Engineering Contract D007625-45, on January 14, 2019, the findings of which are summarized in Section 4.3.2. At this time, most of the on-going site activities are in compliance with the major elements of the MACTEC Engineering and Consulting, P.C. (MACTEC) 2017 Site Management Plan (SMP). Deficiencies in the 2017 SMP have been identified during the groundwater sampling event due to access limitations with Family Danz. Access to monitoring well HRP MW-06 was not granted by the current site owner and therefore, was not sampled.

Based on correspondence with the NYSDEC at the time of this report, it is HDR's understanding that the NYSDEC will attempt to resolve access limitations to HRP MW-06. Additional plans for the site include the installation of a permanent chain link fence on the northeastern border between the site and Patroon Creek and a replacement monitoring well for former HRP MW-10.

Based on the activities performed under this reporting period (August 9, 2018 through January 14, 2019) and anticipated activities to be completed by the NYSDEC, continued annual site inspections are

recommended. The next Periodic Review Report, covering the January 15, 2019 to December 31, 2021 inspections and reporting period, will be due to the NYSDEC in January 2022.

2.0 SITE OVERVIEW

2.1 Site Location and Current Use

The physical site address is 406 North Pearl Street in Albany, New York (tax map no. 65.16-01-25). The approximately 0.34 acre sized property is owned by Danz Holdings, LLC and consists of a vacant lot. The site is bordered to the north by Patroon Creek and an automotive spring business, to the south by a heating and air conditioning company (Family Danz) and medical dispensary, to the west by a boiler tank and welding company, and to the east by North Pearl Street and a health and fitness club. The surrounding area is largely urbanized and consists of various mixed commercial and industrial uses, locally referred to as the warehouse district. A map showing the existing site features has been provided to HDR by PES, and can be found as Figure 1.

2.2 Site History

As stated in the 2017 SMP, a review of Sanborn Fire Insurance Maps for the city of Albany, development was present on the site in 1892 or earlier. Chrome plating operations occurred on the property from the 1920s or earlier, and continued until 1985. The site originally included a 6,600-square foot two story building. Since 1985, the facility stored miscellaneous equipment, household items, municipal waste, and debris. Prior to the June 2014 through November 2015 remedial actions completed by the NYSDEC, the northern portion of the building had partially fallen into Patroon Creek. (MACTEC, 2017)

A brief history of the site's remedial activities can be found below.

- June 2003 – The United States Environmental Protection Agency (USEPA) conducted a Removal Site Evaluation, which included a limited onsite inventory of over 40 containers and several vats. Material labels indicated the presence of strong acids and bases including chromic acid, sodium hydroxide, and zinc solutions. An estimated 2,000 gallons of hazardous wastes were stored in an unsafe manner throughout the building. (NYSDEC, 2014)
- November 2003 to July 2004 – The USEPA completed emergency removals at the site to address the stored onsite hazardous waste materials. (NYSDEC, 2014)
- May 2008 – A Limited Subsurface Investigation was completed and included the installation of five groundwater monitoring wells and six soil borings. The results of the limited investigation indicated elevated concentrations of metals, particularly cadmium, chromium, and nickel, in onsite soil and groundwater. Polychlorinated biphenyls (PCBs) were detected at concentrations less than the NYSDEC Part 375 Residential Soil Cleanup Objectives (SCOs). PCBs were not detected in groundwater samples, and no site impacts were identified in Patroon Creek sediments. (NYSDEC, 2014)

- September 2011 to July 2012 – An Remedial Investigation (RI) was performed and showed high concentrations of metals in surface and subsurface soils. Contaminants of concern (COCs) were identified as barium, cadmium, copper, lead, mercury, nickel, and zinc. SCO exceedances were reported in surface soil samples collected on the northeast portion of the site, both behind and underneath the building. Additionally, SCO exceedances were detected in subsurface soils to a depth of primarily 2 to 4 feet below ground surface (bgs), and 10 to 15 feet bgs under the building. (HRP, 2012)
- March 2014 – The NYSDEC issued a ROD and identified the selected remedy.
- June 2014 to November 2015 – In accordance with the 2014 ROD, various remedial activities took place at the site and included: (NYSDEC, 2017)
    - Asbestos-containing material (ACM) abatement and building demolition work.
    - Excavation of debris from the basement area of the former building.
    - Removal of drums containing hazardous materials encountered during building demolition.
    - Supplemental subsurface investigations.
    - Stabilization of Patroon Creek's bank with the installation of a permanent retaining wall along a 50 to 60 linear foot section of the bank.
    - Abandonment and disposal of an underground storage tank (UST) encountered during installation of the retaining wall.
    - Excavation of hazardous and non-hazardous site soils for offsite disposal.
    - In-situ source area treatment with calcium polysulfide to stimulate metals binding with soil.
    - Backfilling with clean fill and crushed stone to ground surface
- July 2017 – MACTEC, on behalf of the NYSDEC, prepared the SMP to address implementation procedures for the site IC/ECs

2.3 Remediation Objectives

2.3.1 Site Cleanup Objectives

The site cleanup objectives is to restore the impacted media to pre-disposal conditions, to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment, presented by site COCs, through the proper application of scientific and engineering principles. Closure criterion will be determined by the NYSDEC based on the future monitoring data. The Standards, Criteria, and Guidance (SCGs) currently used for the various sample media are summarized below.

- Soil – NYSDEC Environmental Conservation Law (ECL) 6 New York Code of Rules and Regulations (NYCRR) Part 375-6: Remedial Program SCOs.
- Groundwater – NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.

2.3.2 Remedial Action Objectives

The remedial action objectives (RAOs), as stated in the 2014 ROD are as follows:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

RAOs for Environmental Protection

- Remove the source of ground or surface water contamination

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contract with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN COMPLIANCE REPORTS

3.1 Institutional and Engineering Control Requirements and Compliance

The ICs required by the 2014 ROD and identified in the 2017 SMP are as follows:

- Implement, maintain, and monitor EC systems.
- Prevent exposure to remaining contamination.
- Limit the use and site development to industrial or commercial uses, subject to local zoning laws.
- Adherence to additional ICs identified in the Environmental Easement. It should be noted that preparation of the environmental easement is ongoing by the current site owner, and filing is expected during the 2019 to 2020 annual period.

The site ECs, as identified in the 2017 SMP, include the following:

- Clean Fill Cover – The site is covered with a one-foot thick layer of clean fill to prevent direct exposure to soil contamination.
- Monitoring Wells – Groundwater contaminant monitoring is completed through a monitoring well network consisting of one upradient (HRP MW-6), one downgradient (HRP MW-11), and one on-site (HRP MW-7) well.
- Site Access Controls – Unauthorized access to the site is restricted by a southeastern chain link fence and a locking gate via the North Pearl Street driveway. The northeast side of the site is bordered by Patroon Creek.
- Patroon Creek Retaining Wall – A permanent retaining wall installed along 50 to 60 linear feet of the creek bank to facilitate the 2014 to 2015 excavation and backfilling activities.

3.2 Institutional and Engineering Control Certification

The NYSDEC-approved IC/EC certification form is provided with this report and can be found in Appendix A. The EC certification remains unsigned as Corrective Measures are in progress to repair/replace the older section of the Patroon Creek retaining wall.

4.0 MONITORING PLAN COMPLIANCE REPORT

4.1 Components of the Monitoring Plan

A table summarizing the Monitoring Plan components, as described in the 2017 SMP, can be found on Table 1 below.

Table 1
Monitoring Plan Schedule

Frequency	Activity Description
Annual	Site wide inspection to include the documenting the condition of the site security, clean fill cover system, Patroon Creek retaining wall, and monitoring wells.
Every Three Years	Samples of groundwater monitoring wells within site's existing monitoring well network.
As Needed	Site wide inspection following an emergency, such as a natural disaster or EC failure. The inspection will be completed within five days of the qualifying event.

4.2 Monitoring Completed During the Reporting Period

The following activities were completed at the site during this reporting period.

- August 9, 2018 – PES sampled accessible monitoring wells for emerging contaminants.
- January 10, 2019 –PES performed routine groundwater sampling activities on accessible site monitoring wells.
- January 14, 2019 – HDR performed a site wide inspection.

4.3 Comparison with Remedial Objectives

4.3.1 Groundwater Monitoring

As stated above, on August 9, 2018, PES collected groundwater samples from monitoring wells HRP MW-7 and HRP MW-11 and submitted them to Test America Laboratories of Amherst, New York (TA) for analysis of perfluorinated compounds (PFCs) and 1,4-dioxane by USEPA Methods modified 537 and 8270 SIM, respectively. On January 10, 2019, PES collected groundwater samples from aforementioned wells and submitted them to TA for the analysis of Resource Conservation and Recovery Act (RCRA) 8 metals by USEPA Methods 6010C and 7470A. Groundwater samples were not collected from HRP MW-6 during both events due to access disagreements with the site owner at the time of collection.

In December 2018, the New York State Drinking Water Quality Council (NYSDWC) recommended that the New York State Department of Health (NYSDOH) adopt a maximum contamination level (MCL) of 1 microgram per liter (µg/L) for 1,4-dioxane and 10 nanograms per liter (ng/L) for both perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS); the recommendations are under consideration by the Commissioner of Health. As a result of the August 9, 2018 analysis, all detected PFCs in HRP MW-7

were found to be below the recommended ECL. No PFCs were detected in the sample collected from HRP MW-11. 1,4-dioxane was not detected in either sample collected for analysis. A table summarizing the detected compounds can be found below as Table 2 and a copy of the NYSDEC Analytical Services Protocol (ASP) Category A laboratory analytical report can be found in Appendix B.

Table 2
Summary of Detected Emerging Contaminants in Groundwater Samples

	Well ID	HRP MW-7	HRP MW-11
	Sample Date	8/9/2018	8/9/2018
Analyte	**NYSDWC* (ng/L)**	**Results (ng/L)**	
Perfluorobutanoic acid (PFBA)	-	2.2	ND
Perfluorooctanoic acid (PFOA)	10	2.0	ND

Notes:
Samples were collected by PES and analyzed by TA
ng/L – nanograms per liter
ND – not detected
*NYSDWC recommendations are for PFOA, PFOA, and 1,4-dioxane
https://www.health.ny.gov/press/releases/2018/2018-12-18_drinking_water_quality_council_recommendations.htm

As a result of the January 10, 2019 laboratory analysis, barium was only metal detected in both samples above laboratory minimum detection limits (MDLs). Both detected barium concentrations were below their respective Groundwater Quality Standard (GWQS) of 1,000 µg/L . A table summarizing the detected compounds can be found below as Table 3 and a copy of the NYSDEC ASP Category A laboratory analytical report can be found in Appendix B.

Table 3
Summary of Detected Metals in Groundwater Samples

	Well ID	HRP MW-7	HRP MW-11
	Sample Date	1/10/2019	1/10/2019
Analyte	**GWQS* (µg/L)**	**Results (µg/L)**	
Barium	1,000	100	140

Notes:
Samples were collected by PES and analyzed by TA
GWQS – Groundwater Quality Standard, NYSDEC TOGS 1.1.1, Table 1, Water Class GA, June 1998
µg/L – micrograms per cubic liter

4.3.2 Site Inspection

As stated above, HDR performed a site inspection on January 14, 2018. A summary of each inspected EC can be found in the subsequent sections. A photographic log of the inspection can be found in Appendix C. The site inspection forms, provided by the 2017 SMP, are located in Appendix D.

4.3.2.1 Clean Fill Cover

Minor subsidence and depressions were observed in the clean fill cover throughout the site. These features are likely the result of the site's current use (parking for Family Danz). No significant deficiencies in the clean fill cover were observed during the site inspection in January 2019.

4.3.2.2 Site Access Controls

Vehicular and pedestrian access to the site is facilitated via a locking driveway gate on North Pearl Street. The gate is owned and maintained by Family Danz. Upon inspection, the gate appeared to in good condition. Additionally, at the time of the site visit, new orange construction fencing was installed along the site's northeastern boundary, thereby acting as a visual barrier between the site and Patroon Creek. It is HDR's understanding that the NYSDEC will replace the temporary construction fencing with permanent chain link fence in the near future and this site control will be documented during the next reporting period.

Additionally, a United States Geological Survey (USGS) gaging station appeared to be recently installed on the site, adjacent to Patroon Creek. Minor penetrations in the clean site cover to an unknown depth for timber bracing were made to allow the installation of the gaging station. During a discussion with a site representative at the time of inspection, the USGS was allowed access to the area and granted permission by the site owner for the station's installation.

4.3.2.3 Patroon Creek Retaining Wall

The Patroon Creek retaining wall, within the 50 to 60 foot section of wall that was stabilized and permanently replaced with geo-grid and stone, appeared to be in good condition with no evidence of cracks, crumbling, erosion, vegetation, or burrowing animals. The older remaining 66 foot section between the replaced wall and the City of Albany drainage structure was also found to be intact and functioning properly for its age. Additionally, no evidence of soil erosion into Patroon Creek by way of the entire retaining wall was observed. Subsequent to this reporting period an issue with the older section of the retaining wall was discovered during the spring of 2019 when a small area behind the wall washed out. At the time of this report a Corrective Measure is underway to repair/replace the older wall section due to a small erosion hole at the waterline that was discovered when the washed out area was repaired and stabilized.

4.3.2.4 Groundwater Monitoring Wells

Monitoring wells HRP MW-6, HRP MW-7, and HRP MW-11 generally appeared to be in good condition. The concrete pads for HRP MW-6 and HRP MW-11 were observed to be weathered and deteriorated.

4.4 Monitoring Deficiencies

During the review and certification period for this report, only one deficiency in the monitoring program has been encountered. As noted in Section 4.3.1, access to monitoring well HRP MW-6 was not granted by Family Danz due to disagreements about its original location and ownership.

No deficiencies in the site ECs were observed during the site inspection.

4.5 Conclusions and Recommendations

The monitoring plan is effective and provides for an adequate amount of data collection to evaluate the remedy performance, no changes are recommended. The proposed chain link fence, as described in Section 4.3.2.2, will be incorporated into the annual site inspection once installed. The next site inspection and groundwater sampling event, in accordance with the 2017 SMP, are scheduled for January 2020 and January 22, respectively.

For its inclusion in groundwater sampling activities, HDR recommends that access limitations to HRP MW-6 be resolved. Additionally, it is HDR's understanding that the NYSDEC will be installing a replacement monitoring well for former HRP MW-10. If installed within the next reporting period, inspection of the replacement well will be incorporated into the next PRR.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Compliance with the Site Management Plan

Based on the activities associated with the 2017 SMP, the major elements of the plan were generally met during the reporting period. The site ECs, including the clean fill cover and the Patroon Creek retaining wall, are designed to contain and prevent exposure to remaining contamination and were observed to be in good condition during this reporting period. Corrective Measures to address recent deficiencies with the older section of the retaining wall will be implemented in the near future.

5.2 Effectiveness of the Remedy

Data collected during the reporting period indicates that the clean fill cover and Patroon Creek retaining wall are performing as designed and are effective at preventing direct exposure to remaining contamination. Additionally, groundwater analytical results from monitoring wells located side and downgradient of the site show barium concentrations significantly below its respective GWQS. This supports the conclusion that the 2014 to 2015 remedy is effective at preventing off-site contaminant migration.

5.3 Future Periodic Review Report Submittals

In accordance with the 2017 SMP, the next PRR, covering the reporting period January 15, 2019 through December 31, 2021, will be submitted by January 31, 2022.

6.0 REFERENCES

HRP Associates, Inc. 2012. Remedial Investigation Report, Former C & F Plating. August 2012.

HRP Associates, Inc., 2014. Feasibility Study, Former C & F Plating. Submitted November 2012; Revised February 2013 and February 2014.

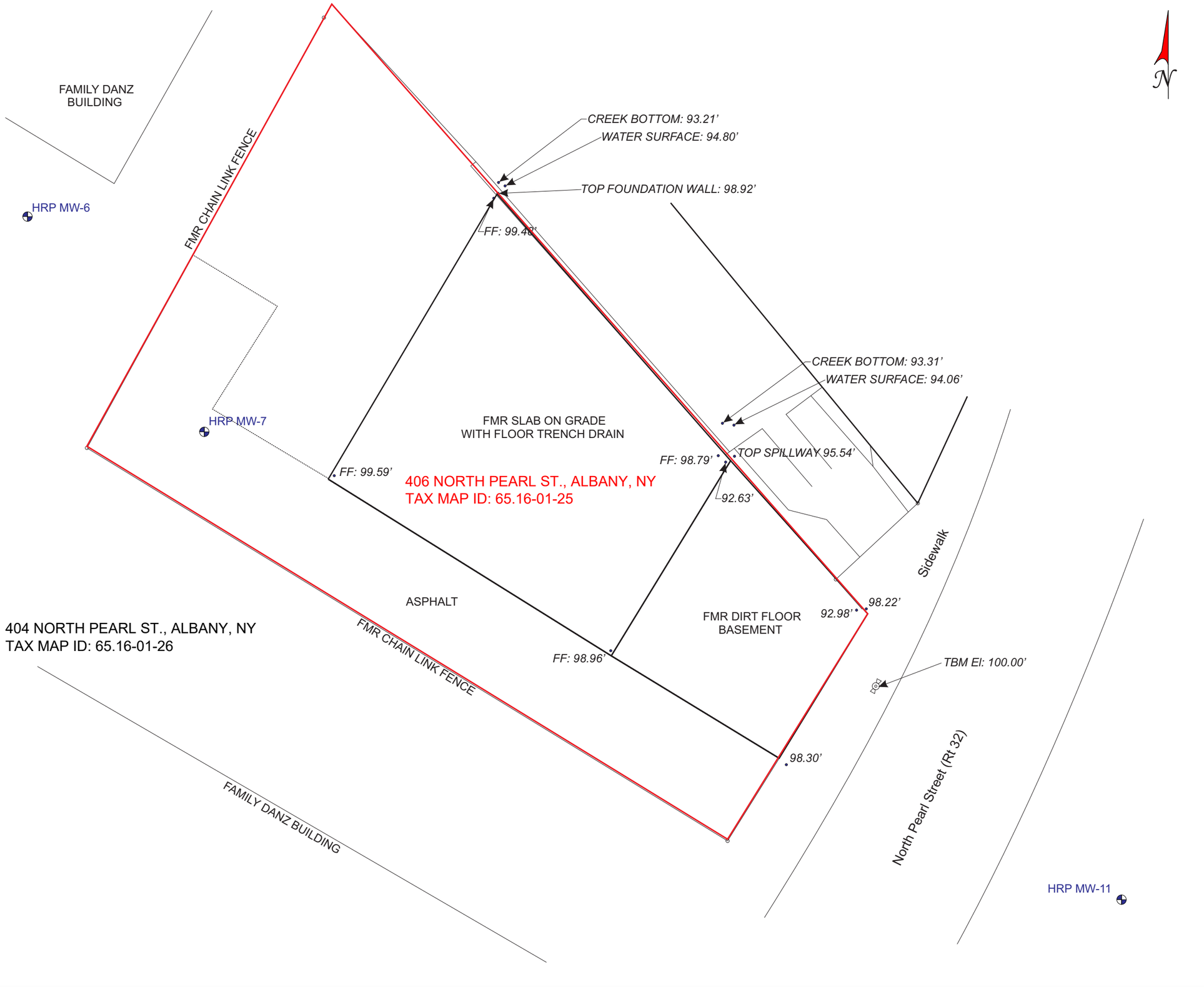
MACTEC Engineering and Consulting, P.C, 2017. Site Management Plan, C & F Plating. July 2017.

NYSDEC, 2017. Final Engineering Report, C & F Plating. March 2017.

NYSDEC, 2014. Record of Decision, C & F Plating State Superfund Project, Albany, Albany County, Site No. 401057. March 2014.

Precision Environmental Services, Inc., 2016. ROD Implementation Report of Findings, C & F Plating Site. October 2016.

FIGURES



PRECISION
ENVIRONMENTAL SERVICES, INC.
831 RT. 67,LOT 28
BALLSTON SPA, NY 12020
TEL: 518-885-4399
FAX: 518-885-4416
CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

SITE PLAN

C&F PLATING SITE

PROJECT #: NYSDEC SITE NO.:

LOCATION: 406 NORTH PEARL ST., ALBANY, NY

DATE: 1/07/2019	**REVISED BY:** SMP
FIGURE: 1	**SCALE:** 1:20

LEGEND

MW-6 EXISTING MONITORING WELL

APPROX.SITE BOUNDARY

0 20 40
Feet

NOTES:

Property boundaries can be viewed on City of Albany, Albany County Tax Map No: 65.16, Lot 01

APPENDIX A

Institutional and Engineering Control Certification Forms

Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. **401057**

Site Name C and F Plating

Site Address: 406 N. Pearl St. Zip Code: 12207
City/Town: Albany
County: Albany
Site Acreage: 0.3

Reporting Period: August 30, 2018 to August 30, 2019

	YES	NO
1. Is the information above correct?	X	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. To your knowledge have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. To your knowledge is the site currently undergoing development?	☐	X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	X	☐
7. Are all ICs/ECs in place and functioning as designed?	☐	X

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

9.10.19
Date

SITE NO. 401057 **Box3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
65.16-01-25	Danz Holdings LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan

EE being prepared by RP legal counsel.

The ICs required by the 2014 ROD and identified in the 2017 SMP are as follows:

- Implement, maintain, and monitor EC systems
- Prevent exposure to remaining contamination
- Limit the use and site development to industrial or commercial uses, subject to local zoning laws
- Adherence to additional ICs identified in the Environmental Easement

Box4

Description of Engineering Controls

Parcel	Engineering Control
65.16-01-25	Cover System Fencing/Access Control Monitoring Wells

The site ECs, as identified in the 2017 SMP, include the following:

- Clean Fill Cover - The site is covered with a one-foot thick layer of clean fill to prevent direct exposure to soil contamination.
- Site Access Controls - Unauthorized access to the site is restricted by a southeastern chain link fence and a locking gate via the North Pearl Street driveway. The northeast side of the site is bordered by Patroon Creek.
- Patroon Creek Retaining Wall - A permanent retaining wall installed along 50 to 60 linear feet of the creek bank to facilitate the 2014 to 2015 excavation and backfilling activities.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification, including data and material prepared by previous contractors for the current certifying period, if any;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

YES	NO
☐	X

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

9.10.15
Date

Please see attached documentation

Box 6

IC/EC CERTIFICATIONS

Professional Engineer Signature

I certify that all information in Boxes 2 through 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____
print name

_____

_____,
(print business address)

am certifying as a Professional Engineer.

Signature of Professional Engineer | Stamp (Required for PE) | Date

Attachment 1

One of the engineering controls at this site includes a clean fill cover system that extends up to an existing retaining wall along Patroon Creek. During routine inspections and site visits it was discovered that the retaining wall along Patroon Creek is in need of repair/replacement. Specifically the retaining wall along the southern bank of the Creek from the existing geogrid-reinforced shoring to the City of Albany down box culvert, a linear distance of approximately 66 feet. A washout behind the wall extending into the cover system occurred during the spring of 2019 and was subsequently repaired on May 10, 2019. The excavation to complete the repair revealed the wall is in poor condition and should be repaired or replaced to maintain the integrity of the clean fill cover system. As part of Amendment #1 for our existing work assignment for this site HDR prepared and submitted a Corrective Measures Work Plan for approval. Once the amendment is approved the repairs/replacement of the retaining wall will be implemented.

APPENDIX B

Laboratory Analytical Report, Groundwater

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-140183-1
Client Project/Site: DEC C and F Plating #401057

For:
Precision Environmental Services Inc.
831 State Route 67
Ste 38
Ballston Spa, New York 12020

Attn: Stephen Phelps

Joseph V. Giacomazza

Authorized for release by:
8/24/2018 4:56:43 PM
Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

Judy Stone, Senior Project Manager
(484)685-0868
judy.stone@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-140183-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-140183-1

Receipt
The samples were received on 8/10/2018 1:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2º C.

Receipt Exceptions
The following sample was submitted for 1,4-Dioxane analysis; however, it was not checked on the Chain-of-Custody (COC): HRP MW-11 (480-140183-1)

The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): HRP MW-11 (480-140183-1), FIELD BLANK (480-140183-2), HRP MW-7 (480-140183-3), HRP MW-7 (480-140183-3[MS]) and HRP MW-7 (480-140183-3[MSD]). HRP MW-11 labeled MW-11, field blank has no time and HRP MW-7 labeled MW-7.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

LCMS
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3535: The following sample(s) HRP MW-11 (480-140183-1) had non-settleable particulate matter which plugged the SPE extraction disk. The amount of sample remaining plus the weight of the bottle are recorded in the "Notes" field of the prep batch. The "Tare Weight" recorded is the weight of the emptied bottle.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Client Sample ID: HRP MW-11 — Lab Sample ID: 480-140183-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.2		1.7		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		1.7		ng/L	1		537 (modified)	Total/NA

Client Sample ID: FIELD BLANK — Lab Sample ID: 480-140183-2

No Detections.

Client Sample ID: HRP MW-7 — Lab Sample ID: 480-140183-3

No Detections.

Client Sample ID: EQUIPMENT BLANK — Lab Sample ID: 480-140183-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: HRP MW-11
Date Collected: 08/09/18 10:50
Date Received: 08/10/18 01:00

Lab Sample ID: 480-140183-1
Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		08/10/18 14:31	08/16/18 19:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*27*		*15 - 110*	*08/10/18 14:31*	*08/16/18 19:22*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.2**		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluoropentanoic acid (PFPeA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorohexanoic acid (PFHxA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorooctanoic acid (PFOA)	**2.0**		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorononanoic acid (PFNA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorodecanoic acid (PFDA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorododecanoic acid (PFDoA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:28	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17		ng/L		08/21/18 10:24	08/23/18 09:28	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17		ng/L		08/21/18 10:24	08/23/18 09:28	1
6:2 FTS	ND		17		ng/L		08/21/18 10:24	08/23/18 09:28	1
8:2 FTS	ND		17		ng/L		08/21/18 10:24	08/23/18 09:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C5 PFPeA	*84*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C2 PFHxA	*87*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C4-PFHpA	*88*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C4 PFOA	*84*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C5 PFNA	*84*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C2 PFDA	*74*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C2 PFUnA	*66*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C2 PFDoA	*55*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C2-PFTeDA	*59*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C3-PFBS	*81*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
18O2 PFHxS	*79*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C4 PFOS	*79*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
13C8 FOSA	*78*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
d3-NMeFOSAA	*67*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
d5-NEtFOSAA	*64*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
M2-6:2FTS	*91*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*
M2-8:2FTS	*81*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:28*	*1*

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Client Sample ID: FIELD BLANK
Date Collected: 08/09/18 11:15
Date Received: 08/10/18 01:00

Lab Sample ID: 480-140183-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluoropentanoic acid (PFPeA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorohexanoic acid (PFHxA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorooctanoic acid (PFOA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorononanoic acid (PFNA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorodecanoic acid (PFDA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorododecanoic acid (PFDoA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:36	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17		ng/L		08/21/18 10:24	08/23/18 09:36	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17		ng/L		08/21/18 10:24	08/23/18 09:36	1
6:2 FTS	ND		17		ng/L		08/21/18 10:24	08/23/18 09:36	1
8:2 FTS	ND		17		ng/L		08/21/18 10:24	08/23/18 09:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*92*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C5 PFPeA	*96*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C2 PFHxA	*100*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C4-PFHpA	*97*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C4 PFOA	*94*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C5 PFNA	*96*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C2 PFDA	*92*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C2 PFUnA	*93*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C2 PFDoA	*90*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C2-PFTeDA	*96*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C3-PFBS	*92*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
18O2 PFHxS	*88*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C4 PFOS	*89*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
13C8 FOSA	*86*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
d3-NMeFOSAA	*92*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
d5-NEtFOSAA	*93*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
M2-6:2FTS	*99*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*
M2-8:2FTS	*100*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:36*	*1*

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Client Sample ID: HRP MW-7
Date Collected: 08/09/18 12:20
Date Received: 08/10/18 01:00

Lab Sample ID: 480-140183-3
Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		08/10/18 14:31	08/16/18 17:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*23*		*15 - 110*	*08/10/18 14:31*	*08/16/18 17:21*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluoropentanoic acid (PFPeA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorohexanoic acid (PFHxA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorooctanoic acid (PFOA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorononanoic acid (PFNA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorodecanoic acid (PFDA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorododecanoic acid (PFDoA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 09:44	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17		ng/L		08/21/18 10:24	08/23/18 09:44	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17		ng/L		08/21/18 10:24	08/23/18 09:44	1
6:2 FTS	ND		17		ng/L		08/21/18 10:24	08/23/18 09:44	1
8:2 FTS	ND		17		ng/L		08/21/18 10:24	08/23/18 09:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*70*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C5 PFPeA	*92*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C2 PFHxA	*95*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C4-PFHpA	*95*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C4 PFOA	*95*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C5 PFNA	*95*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C2 PFDA	*86*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C2 PFUnA	*81*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C2 PFDoA	*83*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C2-PFTeDA	*82*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C3-PFBS	*94*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
18O2 PFHxS	*90*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C4 PFOS	*87*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
13C8 FOSA	*88*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
d3-NMeFOSAA	*85*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
d5-NEtFOSAA	*89*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
M2-6:2FTS	*108*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*
M2-8:2FTS	*99*		*25 - 150*	*08/21/18 10:24*	*08/23/18 09:44*	*1*

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Client Sample ID: EQUIPMENT BLANK
Date Collected: 08/09/18 13:00
Date Received: 08/10/18 01:00

Lab Sample ID: 480-140183-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluoropentanoic acid (PFPeA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorohexanoic acid (PFHxA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorooctanoic acid (PFOA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorononanoic acid (PFNA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorodecanoic acid (PFDA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorododecanoic acid (PFDoA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7		ng/L		08/21/18 10:24	08/23/18 10:07	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17		ng/L		08/21/18 10:24	08/23/18 10:07	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17		ng/L		08/21/18 10:24	08/23/18 10:07	1
6:2 FTS	ND		17		ng/L		08/21/18 10:24	08/23/18 10:07	1
8:2 FTS	ND		17		ng/L		08/21/18 10:24	08/23/18 10:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C5 PFPeA	*94*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C2 PFHxA	*95*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C4-PFHpA	*95*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C4 PFOA	*96*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C5 PFNA	*95*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C2 PFDA	*96*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C2 PFUnA	*94*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C2 PFDoA	*96*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C2-PFTeDA	*124*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C3-PFBS	*87*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
18O2 PFHxS	*90*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C4 PFOS	*92*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
13C8 FOSA	*90*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
d3-NMeFOSAA	*93*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
d5-NEtFOSAA	*98*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
M2-6:2FTS	*104*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*
M2-8:2FTS	*122*		*25 - 150*	*08/21/18 10:24*	*08/23/18 10:07*	*1*

Isotope Dilution Summary

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		DXE							
Lab Sample ID	Client Sample ID	(15-110)							
480-140183-1	HRP MW-11	27							
480-140183-3	HRP MW-7	23							
480-140183-3 MS	HRP MW-7	19							
480-140183-3 MSD	HRP MW-7	22							
LCS 480-429107/2-A	Lab Control Sample	33							
MB 480-429107/1-A	Method Blank	31							

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
480-140183-1	HRP MW-11	69	84	87	88	84	84	74	66
480-140183-2	FIELD BLANK	92	96	100	97	94	96	92	93
480-140183-3	HRP MW-7	70	92	95	95	95	95	86	81
480-140183-3 MS	HRP MW-7	71	91	94	93	95	94	87	81
480-140183-3 MSD	HRP MW-7	72	95	99	95	92	91	84	85
480-140183-4	EQUIPMENT BLANK	91	94	95	95	96	95	96	94
LCS 320-241103/2-A	Lab Control Sample	94	97	95	98	95	98	91	91
MB 320-241103/1-A	Method Blank	87	92	94	96	93	93	87	87

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	13C3-PFBS	PFHxS	PFOS	PFOSA	I-NMeFOSA	5-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
480-140183-1	HRP MW-11	55	59	81	79	79	78	67	64
480-140183-2	FIELD BLANK	90	96	92	88	89	86	92	93
480-140183-3	HRP MW-7	83	82	94	90	87	88	85	89
480-140183-3 MS	HRP MW-7	82	89	92	89	89	86	85	86
480-140183-3 MSD	HRP MW-7	81	90	94	90	88	85	84	85
480-140183-4	EQUIPMENT BLANK	96	124	87	90	92	90	93	98
LCS 320-241103/2-A	Lab Control Sample	92	102	93	90	91	88	93	101
MB 320-241103/1-A	Method Blank	87	94	91	86	86	85	91	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS	M282FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)						
480-140183-1	HRP MW-11	91	81						
480-140183-2	FIELD BLANK	99	100						
480-140183-3	HRP MW-7	108	99						
480-140183-3 MS	HRP MW-7	102	96						
480-140183-3 MSD	HRP MW-7	105	91						
480-140183-4	EQUIPMENT BLANK	104	122						
LCS 320-241103/2-A	Lab Control Sample	99	95						
MB 320-241103/1-A	Method Blank	97	97						

Surrogate Legend

PFBA = 13C4 PFBA

Isotope Dilution Summary

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-429107/1-A
Matrix: Water
Analysis Batch: 429969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 429107

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		08/10/18 14:31	08/16/18 12:59	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*31*		*15 - 110*	*08/10/18 14:31*	*08/16/18 12:59*	*1*

Lab Sample ID: LCS 480-429107/2-A
Matrix: Water
Analysis Batch: 429969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 429107

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.00	1.09		ug/L		109	40 - 140

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8	*33*		*15 - 110*

Lab Sample ID: 480-140183-3 MS
Matrix: Water
Analysis Batch: 429969

Client Sample ID: HRP MW-7
Prep Type: Total/NA
Prep Batch: 429107

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	ND		1.00	1.09		ug/L		109	40 - 140

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
1,4-Dioxane-d8	*19*		*15 - 110*

Lab Sample ID: 480-140183-3 MSD
Matrix: Water
Analysis Batch: 429969

Client Sample ID: HRP MW-7
Prep Type: Total/NA
Prep Batch: 429107

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		1.00	1.09		ug/L		109	40 - 140	0	20

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,4-Dioxane-d8	*22*		*15 - 110*

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-241103/1-A
Matrix: Water
Analysis Batch: 241577

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 241103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluoropentanoic acid (PFPeA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-241103/1-A
Matrix: Water
Analysis Batch: 241577

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 241103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0		ng/L		08/21/18 10:23	08/23/18 09:13	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		20		ng/L		08/21/18 10:23	08/23/18 09:13	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		20		ng/L		08/21/18 10:23	08/23/18 09:13	1
6:2 FTS	ND		20		ng/L		08/21/18 10:23	08/23/18 09:13	1
8:2 FTS	ND		20		ng/L		08/21/18 10:23	08/23/18 09:13	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*87*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C5 PFPeA	*92*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C2 PFHxA	*94*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C4-PFHpA	*96*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C4 PFOA	*93*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C5 PFNA	*93*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C2 PFDA	*87*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C2 PFUnA	*87*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C2 PFDoA	*87*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C2-PFTeDA	*94*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C3-PFBS	*91*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
18O2 PFHxS	*86*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C4 PFOS	*86*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
13C8 FOSA	*85*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
d3-NMeFOSAA	*91*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
d5-NEtFOSAA	*96*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
M2-6:2FTS	*97*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*
M2-8:2FTS	*97*		*25 - 150*	*08/21/18 10:23*	*08/23/18 09:13*	*1*

Lab Sample ID: LCS 320-241103/2-A
Matrix: Water
Analysis Batch: 241577

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 241103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.9		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	41.2		ng/L		103	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.6		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	36.6		ng/L		91	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	42.5		ng/L		106	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.4		ng/L		103	68 - 128

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-241103/2-A
Matrix: Water
Analysis Batch: 241577

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 241103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	40.1		ng/L		100	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.9		ng/L		100	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	40.0		ng/L		100	71 - 131
Perfluorotridecanoic Acid (PFTriA)	40.0	43.0		ng/L		107	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	39.0		ng/L		97	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	35.5		ng/L		100	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.6		ng/L		98	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.7		ng/L		109	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	38.2		ng/L		103	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	42.1		ng/L		109	68 - 128
Perfluorooctane Sulfonamide (FOSA)	40.0	42.1		ng/L		105	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	39.4		ng/L		98	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	39.4		ng/L		99	65 - 125
6:2 FTS	37.9	43.8		ng/L		115	66 - 126
8:2 FTS	38.3	42.6		ng/L		111	67 - 127

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*94*		*25 - 150*
13C5 PFPeA	*97*		*25 - 150*
13C2 PFHxA	*95*		*25 - 150*
13C4-PFHpA	*98*		*25 - 150*
13C4 PFOA	*95*		*25 - 150*
13C5 PFNA	*98*		*25 - 150*
13C2 PFDA	*91*		*25 - 150*
13C2 PFUnA	*91*		*25 - 150*
13C2 PFDoA	*92*		*25 - 150*
13C2-PFTeDA	*102*		*25 - 150*
13C3-PFBS	*93*		*25 - 150*
18O2 PFHxS	*90*		*25 - 150*
13C4 PFOS	*91*		*25 - 150*
13C8 FOSA	*88*		*25 - 150*
d3-NMeFOSAA	*93*		*25 - 150*
d5-NEtFOSAA	*101*		*25 - 150*
M2-6:2FTS	*99*		*25 - 150*
M2-8:2FTS	*95*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-140183-3 MS
Matrix: Water
Analysis Batch: 241577

Client Sample ID: HRP MW-7
Prep Type: Total/NA
Prep Batch: 241103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	ND		34.6	36.0		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	ND		34.6	36.6		ng/L		106	66 - 126
Perfluorohexanoic acid (PFHxA)	ND		34.6	35.3		ng/L		102	66 - 126
Perfluoroheptanoic acid (PFHpA)	ND		34.6	36.2		ng/L		105	66 - 126
Perfluorooctanoic acid (PFOA)	ND		34.6	34.6		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	ND		34.6	34.9		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	ND		34.6	34.8		ng/L		100	69 - 129
Perfluoroundecanoic acid (PFUnA)	ND		34.6	35.0		ng/L		101	60 - 120
Perfluorododecanoic acid (PFDoA)	ND		34.6	34.7		ng/L		100	71 - 131
Perfluorotridecanoic Acid (PFTriA)	ND		34.6	37.4		ng/L		108	72 - 132
Perfluorotetradecanoic acid (PFTeA)	ND		34.6	35.2		ng/L		102	68 - 128
Perfluorobutanesulfonic acid (PFBS)	ND		30.6	30.9		ng/L		100	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	ND		31.5	30.7		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	ND		32.9	37.6		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	ND		32.1	33.7		ng/L		105	67 - 127
Perfluorodecanesulfonic acid (PFDS)	ND		33.4	34.0		ng/L		102	68 - 128
Perfluorooctane Sulfonamide (FOSA)	ND		34.6	36.3		ng/L		105	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		34.6	35.2		ng/L		102	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		34.6	36.4		ng/L		105	65 - 125
6:2 FTS	ND		32.8	39.4		ng/L		112	66 - 126
8:2 FTS	ND		33.1	35.8		ng/L		108	67 - 127

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*71*		*25 - 150*
13C5 PFPeA	*91*		*25 - 150*
13C2 PFHxA	*94*		*25 - 150*
13C4-PFHpA	*93*		*25 - 150*
13C4 PFOA	*95*		*25 - 150*
13C5 PFNA	*94*		*25 - 150*
13C2 PFDA	*87*		*25 - 150*
13C2 PFUnA	*81*		*25 - 150*
13C2 PFDoA	*82*		*25 - 150*
13C2-PFTeDA	*89*		*25 - 150*
13C3-PFBS	*92*		*25 - 150*
18O2 PFHxS	*89*		*25 - 150*
13C4 PFOS	*89*		*25 - 150*
13C8 FOSA	*86*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-140183-3 MS
Matrix: Water
Analysis Batch: 241577

Client Sample ID: HRP MW-7
Prep Type: Total/NA
Prep Batch: 241103

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
d3-NMeFOSAA	85		25 - 150
d5-NEtFOSAA	86		25 - 150
M2-6:2FTS	102		25 - 150
M2-8:2FTS	96		25 - 150

Lab Sample ID: 480-140183-3 MSD
Matrix: Water
Analysis Batch: 241577

Client Sample ID: HRP MW-7
Prep Type: Total/NA
Prep Batch: 241103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	ND		34.1	35.4		ng/L		102	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	ND		34.1	33.6		ng/L		99	66 - 126	9	30
Perfluorohexanoic acid (PFHxA)	ND		34.1	33.1		ng/L		97	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)	ND		34.1	33.7		ng/L		99	66 - 126	7	30
Perfluorooctanoic acid (PFOA)	ND		34.1	35.7		ng/L		105	64 - 124	3	30
Perfluorononanoic acid (PFNA)	ND		34.1	35.0		ng/L		103	68 - 128	0	30
Perfluorodecanoic acid (PFDA)	ND		34.1	35.0		ng/L		103	69 - 129	1	30
Perfluoroundecanoic acid (PFUnA)	ND		34.1	31.1		ng/L		91	60 - 120	12	30
Perfluorododecanoic acid (PFDoA)	ND		34.1	35.4		ng/L		104	71 - 131	2	30
Perfluorotridecanoic Acid (PFTriA)	ND		34.1	36.5		ng/L		107	72 - 132	2	30
Perfluorotetradecanoic acid (PFTeA)	ND		34.1	33.8		ng/L		99	68 - 128	4	30
Perfluorobutanesulfonic acid (PFBS)	ND		30.1	30.2		ng/L		99	73 - 133	2	30
Perfluorohexanesulfonic acid (PFHxS)	ND		31.0	30.3		ng/L		96	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)	ND		32.4	37.8		ng/L		117	68 - 128	1	30
Perfluorooctanesulfonic acid (PFOS)	ND		31.6	32.9		ng/L		104	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)	ND		32.9	33.5		ng/L		102	68 - 128	2	30
Perfluorooctane Sulfonamide (FOSA)	ND		34.1	34.9		ng/L		102	70 - 130	4	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		34.1	34.4		ng/L		101	67 - 127	3	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		34.1	36.3		ng/L		106	65 - 125	0	30
6:2 FTS	ND		32.3	36.9		ng/L		106	66 - 126	7	30
8:2 FTS	ND		32.7	35.2		ng/L		108	67 - 127	2	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA	72		25 - 150
13C5 PFPeA	95		25 - 150
13C2 PFHxA	99		25 - 150
13C4-PFHpA	95		25 - 150
13C4 PFOA	92		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-140183-3 MSD
Matrix: Water
Analysis Batch: 241577

Client Sample ID: HRP MW-7
Prep Type: Total/NA
Prep Batch: 241103

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C5 PFNA	91		25 - 150
13C2 PFDA	84		25 - 150
13C2 PFUnA	85		25 - 150
13C2 PFDoA	81		25 - 150
13C2-PFTeDA	90		25 - 150
13C3-PFBS	94		25 - 150
18O2 PFHxS	90		25 - 150
13C4 PFOS	88		25 - 150
13C8 FOSA	85		25 - 150
d3-NMeFOSAA	84		25 - 150
d5-NEtFOSAA	85		25 - 150
M2-6:2FTS	105		25 - 150
M2-8:2FTS	91		25 - 150

GC/MS Semi VOA

Prep Batch: 429107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140183-1	HRP MW-11	Total/NA	Water	3510C	
480-140183-3	HRP MW-7	Total/NA	Water	3510C	
MB 480-429107/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-429107/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-140183-3 MS	HRP MW-7	Total/NA	Water	3510C	
480-140183-3 MSD	HRP MW-7	Total/NA	Water	3510C	

Analysis Batch: 429969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140183-1	HRP MW-11	Total/NA	Water	8270D SIM ID	429107
480-140183-3	HRP MW-7	Total/NA	Water	8270D SIM ID	429107
MB 480-429107/1-A	Method Blank	Total/NA	Water	8270D SIM ID	429107
LCS 480-429107/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	429107
480-140183-3 MS	HRP MW-7	Total/NA	Water	8270D SIM ID	429107
480-140183-3 MSD	HRP MW-7	Total/NA	Water	8270D SIM ID	429107

LCMS

Prep Batch: 241103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140183-1	HRP MW-11	Total/NA	Water	3535	
480-140183-2	FIELD BLANK	Total/NA	Water	3535	
480-140183-3	HRP MW-7	Total/NA	Water	3535	
480-140183-4	EQUIPMENT BLANK	Total/NA	Water	3535	
MB 320-241103/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-241103/2-A	Lab Control Sample	Total/NA	Water	3535	
480-140183-3 MS	HRP MW-7	Total/NA	Water	3535	
480-140183-3 MSD	HRP MW-7	Total/NA	Water	3535	

Analysis Batch: 241577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140183-1	HRP MW-11	Total/NA	Water	537 (modified)	241103
480-140183-2	FIELD BLANK	Total/NA	Water	537 (modified)	241103
480-140183-3	HRP MW-7	Total/NA	Water	537 (modified)	241103
480-140183-4	EQUIPMENT BLANK	Total/NA	Water	537 (modified)	241103
MB 320-241103/1-A	Method Blank	Total/NA	Water	537 (modified)	241103
LCS 320-241103/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	241103
480-140183-3 MS	HRP MW-7	Total/NA	Water	537 (modified)	241103
480-140183-3 MSD	HRP MW-7	Total/NA	Water	537 (modified)	241103

Lab Chronicle

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Client Sample ID: HRP MW-11

Lab Sample ID: 480-140183-1

Date Collected: 08/09/18 10:50

Matrix: Water

Date Received: 08/10/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			429107	08/10/18 14:31	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	429969	08/16/18 19:22	DMR	TAL BUF
Total/NA	Prep	3535			241103	08/21/18 10:24	KMK	TAL SAC
Total/NA	Analysis	537 (modified)		1	241577	08/23/18 09:28	ABH	TAL SAC

Client Sample ID: FIELD BLANK

Lab Sample ID: 480-140183-2

Date Collected: 08/09/18 11:15

Matrix: Water

Date Received: 08/10/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			241103	08/21/18 10:24	KMK	TAL SAC
Total/NA	Analysis	537 (modified)		1	241577	08/23/18 09:36	ABH	TAL SAC

Client Sample ID: HRP MW-7

Lab Sample ID: 480-140183-3

Date Collected: 08/09/18 12:20

Matrix: Water

Date Received: 08/10/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			429107	08/10/18 14:31	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	429969	08/16/18 17:21	DMR	TAL BUF
Total/NA	Prep	3535			241103	08/21/18 10:24	KMK	TAL SAC
Total/NA	Analysis	537 (modified)		1	241577	08/23/18 09:44	ABH	TAL SAC

Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-140183-4

Date Collected: 08/09/18 13:00

Matrix: Water

Date Received: 08/10/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			241103	08/21/18 10:24	KMK	TAL SAC
Total/NA	Analysis	537 (modified)		1	241577	08/23/18 10:07	ABH	TAL SAC

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Laboratory: TestAmerica Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11666	03-31-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	6:2 FTS
537 (modified)	3535	Water	8:2 FTS
537 (modified)	3535	Water	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctane Sulfonamide (FOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic Acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Method Summary

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Precision Environmental Services Inc.
Project/Site: DEC C and F Plating #401057

TestAmerica Job ID: 480-140183-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-140183-1	HRP MW-11	Water	08/09/18 10:50	08/10/18 01:00
480-140183-2	FIELD BLANK	Water	08/09/18 11:15	08/10/18 01:00
480-140183-3	HRP MW-7	Water	08/09/18 12:20	08/10/18 01:00
480-140183-4	EQUIPMENT BLANK	Water	08/09/18 13:00	08/10/18 01:00

Chain of Custody Record

480501-Albany

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

480-140183 COC

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
PRECISION ENVIRONMENTAL SERVICES	STEVE PHELPS (PES)	8/9/2018	223378
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
831 ROUTE 67, LOT 38A	PES 518-885-4399 FAX 518-885-4416	–	
City / State / Zip Code	**Site Contact**	**Lab Contact**	
BALLSTON SPA / NY / 12020	DAVID CHIULANO	JUDY STONE	
Project Name and Location (State)	**Carrier/Waybill Number**		
C+F PLATING, SITE: 401057	–		
Contract/Purchase Order/Quote No.			
QUOTE: 480-18288			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: PFAS meth 537	1,4 dioxane	Special Instructions/ Conditions of Receipt
HRP MW-11	8/9/18	10:50		X			3						X		
FIELD BLANK	8/9/18	11:15		X			2						X		
HRP MW-7	8/9/18	12:20		X			9						X	X	MS / MSD ANALYSIS
EQUIPMENT BLANK	8/9/18	13:00		X			2						X		

KL 8-9-18

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STANDARD 10 D

QC Requirements (Specify)
0.2 #1

	Date	Time		Date	Time
1. Relinquished By: JONATHAN M ROBINSON	8-9-18	1500	1. Received By: Karl Locke	8-9-18	1500
2. Relinquished By: Karl Locke	8-9-18	1700	2. Received By: TAS	8-10-18	0100
3. Relinquished By			3. Received By		

Comments
SITE: 406 N PEARL ST, ALBANY NY PLEASE CC sbelps@pesnyinc.com + jrobinson@pesnyinc.com w/ results, CAT A DELIVERABLES

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

480501-Albany

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
PRECISION ENVIRONMENTAL SERVICES	STEVE PHELPS (PES)	8/9/2018	223378
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of _
831 ROUTE 67, LOT 38A	PES 518-885-4339 FAX 518-885-4416	–	
City / State / Zip Code	**Site Contact**	**Lab Contact**	
BALLSTON SPA / NY / 12020	DAVID CHIUSANO	JUDY STONE	
Project Name and Location (State)	**Carrier/Waybill Number**		
C+F PLATING, SITE: 401057	–		
Contract/Purchase Order/Quote No.			
QUOTE: 480018288			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: PFAS meth 537	1,4 Dioxane	Special Instruc. Conditions of R.
① HRP MW-11	8/9/18	10:50		X			3						X		
② FIELD BLANK	8/9/18	11:15		X			3						X		
③ HRP MW-7	8/9/18	12:20		X			9						X	X	MS / MSD AN
EQUIPMENT BLANK	8/9/18	13:00		X			2						X		
	KY	8-9-18													

480-140183 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STANDARD 10 D

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
JOHNATHAN M ROBINSON (JR)	8-9-18	1500	Karl Locke	8-9-18	15
2. Relinquished By	**Date**	**Time**	**2. Received By**	**Date**	**Time**
Karl Locke	8-9-18	1700		8-10-18	950
3. Relinquished By	**Date**	**Time**	**3. Received By**	**Date**	**Time**

Comments

SITE: 406 N PEARL ST, ALBANY NY, PLEASE CC sbalch@pesnyinc.com tjrobinson@pesnyinc.com w/ results, CAT A

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

① no HRP on label. ② no time ③ no HRP on sample ID

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THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

S

480-140183 Field Sheet

Job: _____

Tracking # 430065371609 SO / PO / FO / 2-Day / Ground / UPS / Courier / GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:

480-140183

(1) label ID missing HRP

(2) no time noted

(3) label ID missing HRP

10 May 18

Therm. ID: AK-2 / AK-3 / AK-5 / AK-6 / HACCP / Other 2 (+0.7°C)

Ice f Wet f Gel _____ Other _____

Cooler Custody Seal: 57223

Sample Custody Seal: —

Cooler ID: —

Temp: Observed 1.1 Corrected _____

From: Temp Blank ☑ Sample ☐

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Cooler compromised/tampered with?	☐	☑	☐
Samples compromised/tampered with?	☐	☑	☐
Samples w/o discrepancies?	☑	☐	☐
Sample containers have legible labels?	☑	☐	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided.	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Multiphasic samples are not present?	☐	☐	☑
Sample temp OK?	☑	☐	☐
Sample out of temp?	☐	☑	☐

Initials: _____ Date: 8-10-18

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Login Sample Receipt Checklist

Client: Precision Environmental Services Inc.

Job Number: 480-140183-1

Login Number: 140183

List Source: TestAmerica Buffalo

List Number: 1

Creator: Williams, Christopher S

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	PES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Precision Environmental Services Inc.

Job Number: 480-140183-1

Login Number: 140183
List Number: 2
Creator: Nelson, Kym D

List Source: TestAmerica Sacramento
List Creation: 08/11/18 11:19 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	512223
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-147764-1
Client Project/Site: C and F Plating #401057

For:
New York State D.E.C.
625 Broadway
11th Floor
Albany, New York 12233-3256

Attn: Mr. Dave Chiusano

Joseph V. Giacomazza

Authorized for release by:
1/17/2019 12:10:27 PM
Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

Judy Stone, Senior Project Manager
(484)685-0868
judy.stone@testamericainc.com

LINKS

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Have a Question? Ask The Expert

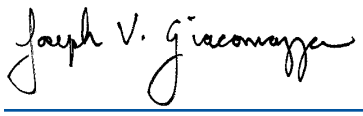
Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Joe Giacomazza
Project Management Assistant II
1/17/2019 12:10:27 PM

Table of Contents

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-147764-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-147764-1

Receipt
The samples were received on 1/11/2019 1:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: New York State D.E.C.
Project/Site: C and F Plating #401057

TestAmerica Job ID: 480-147764-1

Client Sample ID: HRP MW-7
Date Collected: 01/10/19 11:00
Date Received: 01/11/19 01:00

Lab Sample ID: 480-147764-1
Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0056	mg/L		01/12/19 12:17	01/14/19 19:58	1
Barium	**0.10**		0.0020	0.00070	mg/L		01/12/19 12:17	01/14/19 19:58	1
Cadmium	ND		0.0020	0.00050	mg/L		01/12/19 12:17	01/14/19 19:58	1
Chromium	ND		0.0040	0.0010	mg/L		01/12/19 12:17	01/14/19 19:58	1
Lead	ND		0.010	0.0030	mg/L		01/12/19 12:17	01/14/19 19:58	1
Selenium	ND		0.025	0.0087	mg/L		01/12/19 12:17	01/14/19 19:58	1
Silver	ND		0.0060	0.0017	mg/L		01/12/19 12:17	01/14/19 19:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		01/14/19 11:30	01/14/19 15:44	1

Client: New York State D.E.C.
Project/Site: C and F Plating #401057

TestAmerica Job ID: 480-147764-1

Client Sample ID: HRP MW-11
Date Collected: 01/10/19 14:00
Date Received: 01/11/19 01:00

Lab Sample ID: 480-147764-2
Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0056	mg/L		01/12/19 12:17	01/14/19 20:02	1
Barium	**0.14**		0.0020	0.00070	mg/L		01/12/19 12:17	01/14/19 20:02	1
Cadmium	ND		0.0020	0.00050	mg/L		01/12/19 12:17	01/14/19 20:02	1
Chromium	ND		0.0040	0.0010	mg/L		01/12/19 12:17	01/14/19 20:02	1
Lead	ND		0.010	0.0030	mg/L		01/12/19 12:17	01/14/19 20:02	1
Selenium	ND		0.025	0.0087	mg/L		01/12/19 12:17	01/14/19 20:02	1
Silver	ND		0.0060	0.0017	mg/L		01/12/19 12:17	01/14/19 20:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		01/14/19 11:30	01/14/19 15:50	1

Lab Chronicle

Client: New York State D.E.C.
Project/Site: C and F Plating #401057

TestAmerica Job ID: 480-147764-1

Client Sample ID: HRP MW-7

Lab Sample ID: 480-147764-1

Date Collected: 01/10/19 11:00

Matrix: Water

Date Received: 01/11/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			454763	01/12/19 12:17	EMB	TAL BUF
Total/NA	Analysis	6010C		1	455068	01/14/19 19:58	LMH	TAL BUF
Total/NA	Prep	7470A			454894	01/14/19 11:30	BMB	TAL BUF
Total/NA	Analysis	7470A		1	454985	01/14/19 15:44	BMB	TAL BUF

Client Sample ID: HRP MW-11

Lab Sample ID: 480-147764-2

Date Collected: 01/10/19 14:00

Matrix: Water

Date Received: 01/11/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			454763	01/12/19 12:17	EMB	TAL BUF
Total/NA	Analysis	6010C		1	455068	01/14/19 20:02	LMH	TAL BUF
Total/NA	Prep	7470A			454894	01/14/19 11:30	BMB	TAL BUF
Total/NA	Analysis	7470A		1	454985	01/14/19 15:50	BMB	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: New York State D.E.C.
Project/Site: C and F Plating #401057

TestAmerica Job ID: 480-147764-1

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Method Summary

Client: New York State D.E.C.
Project/Site: C and F Plating #401057

TestAmerica Job ID: 480-147764-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
3005A	Preparation, Total Metals	SW846	TAL BUF
7470A	Preparation, Mercury	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: New York State D.E.C.
Project/Site: C and F Plating #401057

TestAmerica Job ID: 480-147764-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-147764-1	HRP MW-7	Water	01/10/19 11:00	01/11/19 01:00
480-147764-2	HRP MW-11	Water	01/10/19 14:00	01/11/19 01:00

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Albany
#224

Chain of Custody Record

480-147764 COC

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Patrick Sokolowski	Lab PM: Stone, Judy L	COC No: 480-123720-28301.1
Client Contact: Stephen Phelps / David Chiusano	Phone: 518-885-4399	E-Mail: judy.stone@testamericainc.com	Page: Page 1 of 1
Company: Precision Environmental Services Inc. / NYSDEC Central Office			Job #:
Address: 831 State Route 67 Ste 38	Due Date Requested:		
City: Ballston Spa	TAT Requested (days): 10 Days		
State, Zip: NY, 12020			
Phone: 518-402-9814(Tel)	PO #: CallOut ID:		
Email: sphelps@pesnyinc.com	WO #:		
Project Name: C and F Plating #401057	Project #: 48010667		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 7470A	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D		
HRP MW-7	1/10/19	1100	Grab	Water	Y		X	1	
HRP MW-11	1/10/19	1400	Grab	Water	Y		X	1	
				Water					
KZ	1-10-19			Water					
				Water					

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: CAT A deliverables

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 1-10-19 / 1500	Company: PES	Received by:	Date/Time: 1-10-19 1500	Company: TA		
Relinquished by: Karl Fadus	Date/Time: 1-10-19 1800	Company: TA	Received by:	Date/Time: 1/11/19 0100	Company: TMTB		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.1°C #3

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-147764-1

Login Number: 147764

List Source: TestAmerica Buffalo

List Number: 1

Creator: Velickovic, Zoran

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	Precision ESI
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

APPENDIX C

2019 Site Inspection Photographic Log

PHOTOGRAPHIC LOG

Client Name/Contract	Site Location:	Project No.
NYSDEC / D007625-45	Former C&F Plating site	10145063

Photo No.	Date:
1	1/14/2019

Site overview.

Photo looking northwest.

Photo No.	Date:
2	1/14/2019

Description:

View of Patroon Creek retaining wall.

Photo is looking northwest.

PHOTOGRAPHIC LOG

Client Name/Contract	Site Location:	Project No.
NYSDEC / D007625-45	Former C&F Plating site	10145063

Photo No.	Date:
3	1/14/2019

Description:

New orange construction fencing installed along north side of the site and parallel to Patroon Creek. Additionally pictured, a recently installed USGS gaging station.

Photo looking southeast.

Photo No.	Date:
4	1/14/2019

Description:

Condition of HRP MW-6.

APPENDIX D

2019 Site Inspection Forms

C and F Plating Site

Annual Site Inspection Form

A. Site Cap

The site cap will be inspected by traversing the site and examining the following items. Please place a check mark on each line accordingly:

	No	Yes
1. Are there bare, dead or damaged vegetated areas?	X	
2. Is there evidence of cracks or subsidence?		X
3. Is there evidence of burrowing by animals?	X	
4. Is there any deep-rooted vegetation present?	X	
5. Is there any erosion damage to vegetative areas?	X	
6. Are there any low spots or settlement in cap system?		X
7. Is there evidence of ponding?	X	
8. Was a settlement survey performed? (If so, attach data)	X	

Comments: (Please comment for each question answered "yes")

Minor depressions and subsidence visible in clean cover likely due to current site use, parking for site owner.

B. Patroon Creek Retaining Wall

The retaining wall will be inspected by walking the length of the creek abutting the site, from the top of bank and examining the following:

	No	Yes
1. Is there evidence of cracks or crumbling?		
2. Is there any erosion damage to the retaining wall?	X	
3. Is there evidence of site soil erosion into the creek?	X	
4. Is there any deep-rooted vegetation present?	X	
5. Is there evidence of burrowing by animals?	X	

Comments: (Please comment for each question answered "yes")

C. Monitoring Wells

See attached FDR

D. Fence

The fence will be inspected by walking the full length of the fence and examining for the following:

	No	Yes
Is there damage to the fence around the site?	X	
Is there damage to gate entrances?	X	

Comments: (Please comment for each question answered "yes")
New orange construction fence installed along northern side boundary and parallel to Patroon Creek

E. Site Usage

Evidence of the following will be noted as the inspection takes place.

	No	Yes
Is there evidence of anyone living at the site?	X	
Is there evidence of gardening or farming on the site?	X	
Is there evidence of the installation of a drinking water well on the site?	X	

Comments: (Please comment for each question answered "yes")

Site Management Activities

Upon completion of the inspection the following will be checked for compliance with the SMP.

	No	Yes
Was sampling conducted during this inspection?	X	
Was a Health and Safety Inspection Conducted?	X	
Are there any known missing site records?	X	

Comments: (Please comment for each question answered "yes")

	No	Yes
Are Engineering controls performing as designed?		X
Do EC/ICs continue to be protective to human health and the environment?		X
Compliance with the requirements of the SMP and Environmental Easement?	X	

Comments: (Please comment for each question answered "no")
ECs in compliance with the requirements of the SMP. Environmental Easement still in process at the time of the inspection.

Notes from last inspection: (Please review and comment)
First inspection since the issuance of the 2017 SMP.

Justin King
Inspector

1/14/2019
Signature Date

Reviewer Date

Monitoring Well Inspection Form

Inspector(s): Justin King

Date: 1/14/2019 **Reviewed by:**

Well ID	Ground Elevation[1] (feet msl)	Estimated Measurement Point Elevation[2] (feet msl)	Water Level (feet TOR)	Stickup on Casing (feet)	TOC to TOR (feet)	Depth to BOW (feet TOR)	Well ID Clearly Labeled (Y/N)	Well Lock (Y/N)	Cap on Well Riser (G/P/F)	Cap on Protective Casing (G/F/P)	Protective Casing (G/F/P)	Concrete Pad (G/F/P)	Comments
HRP-MW-6	NM	NM	NM	NA	NM	NM	N	N	F	F	G	P	No lock on J-plug, concrete pad deteriorating
HRP-MW-7	NM	NM	NM	NA	NM	NM	N	Y	F	P	F	F	Manhole cover missing at the time of inspection
HRP-MW-8	—												Well abandoned/destroyed
HRP-MW-9	—												Well abandoned/destroyed
HRP-MW-10	—												Well abandoned/destroyed
HRP-MW-11	NM	NM	NM	NA	NM	NM	N	N	F	F	G	P	No lock on J-plug, concrete pad deteriorating

Notes:

msl = mean sea level
TOC = top of casing
TOR = top of riser
BOW = bottom of well
NM = not measured
NA = not available

F = Fair
G = Good
N = No
P = Poor
Y = yes

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